

WHAT IS CLAIMED IS:

1 1. A disposable chromatography cartridge for separating a chemical contained in a
2 solution comprising
3 a vessel having an inlet and outlet, and
4 a monolith chromatography stationary phase inside said vessel,
5 said vessel having a flexible wall that is deformable by externally applied force so as
6 to reduce a volume within said vessel.

1 2. The cartridge of claim 1 wherein said vessel is tubular.

1 3. The cartridge of claim 2 wherein said vessel is cylindrical.

1 4. The cartridge of claim 1 wherein said flexible wall is made of plastic.

1 5. The cartridge of claim 1 wherein said monolith chromatography stationary phase is
2 formed within said vessel.

1 6. The cartridge of claim 1 wherein said monolith chromatography stationary phase is
2 preformed and thereafter inserted into said vessel.

1 7. The cartridge of claim 1 wherein said monolith chromatography stationary phase is
2 a material selected from the group consisting of methacrylates, agarose based materials,
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.

1 8. Chromatography apparatus for separating a chemical contained in a solution
2 comprising
3 a vessel having a flexible wall that deforms in response to externally applied pressure
4 so as to reduce a volume within said vessel,
5 a monolith chromatography stationary phase inside said vessel, and
6 a wall deflector that deflects said flexible wall so as to reduce the volume within said
7 vessel.

1 9. The apparatus of claim 8 wherein said wall deflector includes an outer
2 pressurizable chamber, and said vessel is mounted within said chamber such that said flexible
3 wall is exposed to increased fluid pressure within said chamber.

1 10. The apparatus of claim 8 wherein said wall deflector includes a mechanical
2 member that applies force to said flexible wall to deform said flexible wall.

1 11. The apparatus of claim 8 wherein said vessel is tubular, said flexible wall extends
2 around a periphery of said vessel.

1 12. The apparatus of claim 8 wherein said wall deflector includes a clamping
2 structure that applies force to said wall at a plurality of locations around said periphery.

1 13. The apparatus of claim 8 wherein said monolith chromatography stationary phase
2 is a material selected from the group consisting of methacrylates, agarose based materials,
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.

1 14. A method of separating a chemical contained in a solution comprising
2 providing a vessel having a flexible wall, and inlet and outlet, and a monolith
3 chromatography stationary phase inside said vessel,
4 supplying said solution under pressure to said inlet,
5 applying external force to said flexible wall to deform said flexible wall, and
6 removing separated solution from said outlet.

1 15. The method of claim 14 wherein said applying external force includes exposing
2 said flexible wall to increased fluid pressure within a pressurizable chamber.

1 16. The method of claim 14 wherein said applying external force includes applying
2 force via a mechanical member.

1 17. The method of claim 16 wherein said vessel is tubular, said flexible wall extends
2 around a periphery of said vessel, and said mechanical member includes a clamping structure
3 that applies force to said wall at a plurality of locations around said periphery.

1 18. The method of claim 14 wherein said monolith chromatography stationary phase
2 is a material selected from the group consisting of methacrylates, agarose based materials,
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.

1 19. A method of making a disposable chromatography cartridge for separating a
2 chemical contained in a solution comprising
3 providing a vessel having an inlet and outlet and a flexible wall that is deformable by
4 externally applied force so as to reduce a volume within said vessel, and
5 providing a monolith chromatography stationary phase inside said vessel.

1 20. The method of claim 19 wherein said providing a monolith chromatography
2 stationary phase includes forming said monolith chromatography stationary phase within said
3 vessel.

1 21. The method of claim 19 wherein said providing a monolith chromatography
2 stationary phase includes preforming said monolith chromatography stationary phase outside
3 of said vessel and thereafter inserting said monolith chromatography stationary phase into
4 said vessel.

1 22. The method of claim 14 wherein said monolith chromatography stationary phase
2 is a material selected from the group consisting of methacrylates, agarose based materials,
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.